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(54) **SCALING METHOD AND APPARATUS FOR A FLAT PANEL DISPLAY**

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(57) **ABSTRACT**

A method and apparatus for the scaling of digital image data for improved image quality on LCD displays is described. An output pixel value is determined from a source pixel array approximately centered at the output pixel location. Edge arrays are generated by comparing the differences in the color component values of adjacent vertical and horizontal pixels to a threshold value. Logic arrays operate on edge arrays to determine if the source pixel array matches predetermined pixel arrangements. Offset values corresponding to the location of the output pixel relative to the center pixel in the source pixel array are calculated. The offset values are modified if a logic array match is found. Offset values are also modified according to a predetermined modifier function. Bilinear interpolation based on the resulting offset values is used to determine the output pixel value.

29 Claims, 11 Drawing Sheets